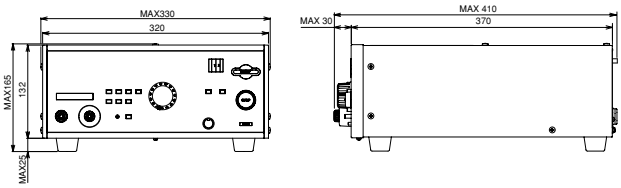
WITHSTANDING VOLTAGE TESTER

耐压测试仪
TOS8040C

对应标准测试的耐压专用型号

Withstanding-voltage-specific model supporting the standard test



A 也备有采用英文的型号

The English inscription model is also provided.

还备有操作面板和使用说明书采用英文的型号。有关这些型号的详情，欢迎来电垂询。

re is a model that comes with glish version of the operation el and operation manual. details, contact us.

新产品

特点 Features

- 耐压为 AC 4 KV/100 mA
- 符合各种安全标准
- 数字电压计
- 带分辨率为 0.1 秒的数字计时器（0.5 s～9.9 s、1 s～99 s）
- 在 1 mA～100 mA 内判定
- 采用窗口比较器方式进行良否判定
- 装备了远程控制功能
- 各种信号输出功能
- 搭载了过零投入开关

- Withstanding voltage: 4 kVAC/100 mA
- Supporting various safety standard tests
- Digital voltmeter
- Digital timer (0.5 to 9.9 s; 1 to 99 s, Resolution: 0.1 s)
- Judgement range: 1 mA to 100 mA
- Window comparator method adopted for judgment
- Various remote control functions
- Various signal output functions
- Zero turn-on switch

TOS8040C 系列是根据各种安全标准进行电子设备和电子部件耐压试验的测试仪。与传统类型相比，小型、轻量而可输出ＡＣ４ＫＶ。良否判定功能采用了窗口比较器方式，不仅在检测到面板面上所设定的大于或等于上限基准值的漏电电流时可以判定 FAIL，而且在检测到小于或等于下限基准值的电流时也能够判定 FAIL，同时还可以进行测试引线的断线和接触不良等测试。可以远程控制启动 / 停止操作，同时利用判定结果的输出功能，可以实现测试的自动化和省力化。另外，为了防止操作疏失和事故，该系列上装备有、联锁功能、铰接插入口的高压输出端子、大型 DANGER 指示灯等，确保了高度的安全性和可靠性。

The TOS8040C Series is a tester for conducting withstanding voltage tests on electronic devices and components in accordance with the relevant safety standards. Although smaller and lighter than its predecessors, it provides an output of 4 kVAC. The tester adopts a window comparator method for acceptance judgment, enabling it to identify fault not only upon detecting a leak current exceeding the high reference level preset on its panel but also when it detects a current below the low reference level. This allows you to include the checks for test lead disconnection and poor contact in your testing activity. The starting and stopping of the tester can be controlled remotely. Using the tester's judgment result output function together with this remote control capability helps you automate your testing process and save labor. What's more, the tester has many features to protect against inadvertent operations and accidents, such as interlock functions, a high-voltage output terminal with a small jack, and a large DANGER lamp, thereby achieving high levels of safety and reliability.

本章描述本测试仪的电气规格和机械规格。若无特别指定，本测试仪规格的设置及条件如下。

●预热时间：30 分●温度：5℃ 到 35℃●湿度：20% 到 80% RH（无凝结露水）● xx% of reading 是指电压计（或电阻计）的读数的 xx%。

耐压测试仪

[输出部]

输出电压范围 ..... 0.05 kV 到 4.00 kV/1 量程
最大额定负载(*1) ..... 400 VA（4 kV/100 mA）(输入电压为 220 V 时)
变压器容量 ..... 500 VA
输出电压波形(*2) ..... 商用电源波形
电压变动率 ..... 10% 以下（从最大额定负载到无负载的迁移过程）
短路电流 ..... 200 mA 以上（输出电压 1.0 kV 以上时）
开关 ..... 使用过零投入开关

[电压计]

显示 ..... 数字显示 3 位
测量范围 ..... 0.00 kV 到 5.00 kV/2 量程
显示分辨率 ..... 10 V
精确度 ..... Vm ≥ 1.00 kV：±（2% of reading +10 V）
Vm < 1.00 kV：±（2% of reading +20 V）
Vm：测量电压值
响应 ..... 平均值响应 / 有效值显示

*1 关于输出时间限制
根据电流上限基准值以及工作温度，连续输出时间会受到限制。

*2 关于测试电压波形
若容量性的负载上加载交流电压，则根据负载容量值的不同，可能即使与无负载相比，输出电压还要上升。若是负载了容量值对电压有依存性的测试材料（如陶瓷电容等），则可能产生波形扭曲。但测试电压为 1.5 kV 时，1000 pF 以下容量的影响可忽略不计。

[判定功能]

判定方法 ..... 双限比较器方式

上限基准值 ..... 1/2/4/8/10/25/100 的 7 量程
通过量程的组和，可在 1 mA 到 50 mA 范围内，以 1 mA 为单位设定
下限基准值 ..... 0 到上限基准值的 1/2 处连续可变
判定精确度 ..... 上限基准值的 ±（5% +20 μA）
下限基准值的 ±20%

[时间]

测试时间 ..... 0.1 量程：0.5 s 到 9.9 s，分辨率：0.1 s
1 量程：1 s 到 99 s（有关闭定时器功能），分辨率：1 s
精确度 ..... -0 ms, +50 ms

共通项目，其他功能

[遥控]

连接器 ..... 前面板 5 针 DIN 连接器
可能的控制 ..... 测试的开始 / 中止
可连接的选购件 ..... 遥控器：RC01C-TOS，RC02C-TOS
高电压测试探针：HP01AC-TOS，HP02AC-TOS

[信号输入输出]

连接器 ..... 后面板 14 针无螺丝端子
状态信号输出 ..... 输出准备就绪信号、有高压信号、合格信号、不合格信号以及保护信号
闭合接点信号（接点额定值：1 A / 30 Vdc）
电源输出端子 ..... 内部电源（24 V，100 mA）输出
共通 (COMMON) 端子与机壳电位等价
联锁(INTERLOCK)输入端子 ..... 端子间开放时为保护 (PROTECTION) 状态

[特殊测试模式]

双动作(DOUBLE ACTION) ... 仅在按完测试停止按钮后约 0.5 秒以内按测试开始按钮时测试开始
合格保持(PASS HOLD) .... 保持合格判定
瞬时(MOMENTARY) ..... 仅仅在按住测试开始 (START) 按钮的期间进行测试
不合格方式(FAIL MODE) ... 通过遥控的 STOP 信号使不合格或保护状态的解除无效

普通规格

[环境]

工作环境 ..... 室内使用，高度 2000 m 为止
规格保证范围 ..... 温度 5℃ 到 35℃
湿度 20% 到 80% RH（无凝结露水状态）
工作范围 ..... 温度 0℃ 到 40℃
湿度 20% 到 80% RH（无凝结露水状态）
保存范围 ..... 温度 -40℃ 到 70℃
湿度 90% RH 以下（无凝结露水状态）

[交流输入]

公称输入额定值 ..... 220 Vac 50 Hz/60 Hz
输入电压范围 ..... 200 V 到 240 Vac
消耗电力 ..... 无负载时（准备就绪状态）50 VA 以下
额定负载时 ..... 最大 650 VA
[绝缘电阻] ..... 交流输入 (AC INPUT) ―机壳间
30 MΩ 以上（500 Vdc）
[耐压] ..... 交流输入 (AC INPUT) ―机壳间
1390 Vac，2 秒内加载，20 mA 以下
[接地连续性] ..... 25 Aac/0.1Ω 以下
[外形尺寸(最大部分)] ..... 320（330）W×132（165）H×370（410）D mm
[质量] ..... 约 17 kg
[附属品] ..... 高电压测试导线 TL01C-TOS（约 1.5 m）：1 组 / 电源线：1 根 / 联锁 (INTERLOCK) 用跳线：1 根 / 使用说明书：1 本

Provides the electrical and mechanical specifications for the TOS8040C. The specifications are based on the following conditions and settings, unless otherwise specified.

●Warm-up time: 30 minutes ●Temperature: 5°C to 35°C ●Humidity: 20% to 80% R.H. (with no dew condensation) ●"xx% of reading" represents xx% of voltmeter (or resistance meter) reading.

Withstanding Voltage Tester

[Output section]

Output voltage range ..... 0.05 kV to 4.00 kV / single range
Maximum rated load (*1) ..... 400 VA (4 kV/100 mA)(at an input voltage of 220 V)
Transformer capacity ..... 500 VA
Output voltage waveform (*2) ..... AC line waveform
Voltage regulation ..... 10% or less(during transition from the maximum rated load to no-load)
Short-circuit current ..... 200 mA or more (at output voltage of 1.0 kV or more)
Switching ..... A zero-start switch is used.

[Voltmeter]

Display ..... Digital three-digit indication
Measurement range ..... 0.00 kV to 5.00 kV/double ranges
Display resolution ..... 10 V
Accuracy ..... Vm ≥ 1.00 kV: ± (2% of reading + 10 V)
Vm < 1.00 kV: ± (2% of reading + 20 V)
where Vm: measured voltage value
Response ..... Mean value response/rms value indication

*1 Time limitations on the output
The continuous output time may be limited depending on the upper limit of the reference current value and the ambient temperature.

*2 Test voltage waveform
If AC voltage is applied to a capacitive load, the output voltage in certain cases may rise above the value at no-load, depending on the value of the capacitive portion of the load. Moreover, for samples whose capacity values show voltage dependency (as with ceramic capacitors), waveform distortions may result. However, for a test voltage of 1.5 kV, the effects of a capacity of 1000 pF or less may be ignored.

[Judgment function]

Judgment method ..... Compares the reference values and measured leakage current using a window comparator. The result is returned as a PASS or FAIL.
Upper reference limit ..... 1/2/4/8/10/25/100 mA (7 ranges)
May be set from 1 mA to 50 mA in 1 mA steps by a combination of ranges.
Lower reference limit ..... Continuously variable from 0 to 1/2 of the upper reference limit
Judgment accuracy ..... ± (5% +20 μA) with respect to the upper reference limit
± 20% with respect to the lower reference limit

[Time]

Test time ..... ×0.1 mA range: 0.5 s to 9.9 s, Resolution: 0.1 s
×1 mA range: 1 s to 99 s (the TIMER off function provided), Resolution: 1 s
Timer apccuracy ..... –0 ms, +50 ms

Common Items, Other Functions

[Remote control]

Connector ..... 5-pin DIN connector on the front panel
Control available ..... Start/stop of testing
Optional devices connectable .... Remote control boxes: RC01C-TOS and RC02C-TOS
High-voltage test probes: HP01AC-TOS and HP02AC-TOS

[Signal I/O]

Connector ..... 14-pin screw-less terminal on the rear panel
Status signal output ..... Output of a READY signal / H.V ON signal / PASS signal / FAIL signal / PROTECTION signal
Make-contact signal (contact rating: 1 A/30 Vdc)
Power output terminal ..... Output of internal power (24 V at 100 mA)
The COMMON terminal has a potential equal to the chassis potential.
INTERLOCK input terminal ..... A PROTECTION state is invoked when the terminals are open.

[Special test modes]

DOUBLE ACTION ..... Starts testing only when the START switch is pressed within approx.
0.5 sec. after the STOP switch has been released.
PASS HOLD ..... Holds PASS judgment.
MOMENTARY ..... Performs testing only while the START switch is pressed.
FAIL MODE ..... Disables cancellation of the FAIL or PROTECTION state caused by a remote STOP signal.

General Specifications

[Environment]

Operation environment ..... Indoor use and altitudes up to 2000 m
Specifications assured range ... Temperature 5°C to 35°C
Humidity 20% to 80% R.H. (with no dew condensation)
Operating range ..... Temperature 0°C to 40°C
Humidity 20% to 80% R.H. (with no dew condensation)
Storage range ..... Temperature –40°C to 70°C
Humidity 90% or less R.H. (with no dew condensation)

[AC input]

Nominal input rating ..... 220 Vac, 50 Hz or 60 Hz
Input voltage range ..... 200 V to 240 Vac
Power consumption ..... At no-load (in READY state): 50 VA or less
At rated load: 650 VA maximum
[Insulation resistance] ..... AC INPUT to chassis
30 MΩ or more (at 500 Vdc)
[Withstand voltage] ..... AC INPUT to chassis
20 mA or less when 1390 Vac is applied for 2 seconds
[Grounding continuity] ..... 25 Aac / 0.1 Ω or less
[Dimensions (largest section)] ... 320 (330) W × 132 (165) H × 370 (410) D mm
[Weight] ..... Approx. 17 kg
[Accessories] ..... High-voltage test leads TL01C-TOS (approx. 1.5 m): 1 set / Power cord: 1 / INTERLOCK jumper: 1 / Operation Manual: 1 copy

OPTIONS FOR ELECTRICAL SAFETY TESTERS

注意 1：选购件的面板标示文字和使用说明书为英文。
注意 2：有★符号的产品由日本菊水电子工业株式会社制造。

Note 1: The panel labels and operation manuals of the optional products are in English.
Note 2: The products marked ★ are manufactured by KIKUSUI Electronic Corp. of Japan.

用于安全测试仪器的选购件

Remote control box

■远程控制箱

● RC01C-TOS

用于单手操作的 One-handed operation
尺寸 Dimensions：200W×70H×39Dmm
※附属电缆长度 Accessory cable length：1.5m

● RC02C-TOS

用于两手操作的 Double-handed operation
尺寸 Dimensions：330W×70H×39Dmm
※附属电缆长度 Accessory cable length：1.5m

High-voltage test Lead

■高电压测试引线

● TL01C-TOS

电缆长度 Cable length：1.5m
最大使用电压 Maximum operating voltage：5kV

● TL02C-TOS

电缆长度 Cable length：3m
最大使用电压 Maximum operating voltage：5kV

Warning light unit

■警告灯单元 ★

● PL02-TOS

根据 TOS8830C 背面的 AC/DC24V 信号进行 ON / OFF 控制。
The light is turned on and off by the 24-V AC/DC signal fed from the rear side of TOS8830C.

High-voltage test probe (pistol type)

■高电压测试探针（手枪型）

● HP01AC-TOS

电缆长度 Cable length：1.8 m
最大使用电压 Maximum operating voltage：
4 kV DC 5 kV

● HP02AC-TOS

电缆长度 Cable length：3.5 m
最大使用电压 Maximum operating voltage：
4 kV DC 5 kV

（相关产品介绍）菊水电子工业 TOS系列
(Information about Related Products) KIKUSUI Electronic Corp. TOS Series

高质量品牌“KIKUSUI”的安全测试仪器 !!
Electrical safety tester developed under the quality brand of KIKUSUI !!

Withstanding Voltage & Insulation Tester

耐压 / 绝缘电阻测试仪
TOS9200 Series

Withstanding Voltage & Insulation Tester

耐压 / 绝缘电阻测试仪
TOS8870A

Withstanding Voltage Tester

耐压测试仪
TOS5000(A) Series

Earth Continuity Tester

地线导通测试仪
TOS6200 Series

Insulation Tester

绝缘电阻测试仪
TOS7200

●菊水电子工业产品的联系方式
For information about products of KIKUSUI Electronic Corp., contact:

菊水电子工业株式会社 上海代表处
Shanghai Representative Office of KIKUSUI Electronic Corp.
上海市浦东新区浦东大道 138 号 永华大厦 9 层 A-02 室
Room A-02, 9F, Yonghua Bldg., No.138, Pudong Road,
Pudong New District, Shanghai City
TEL: 021-5882-4320 FAX: 021-5887-9069

菊水电子工业株式会社 国际部
International Section, KIKUSUI Electronic Corp.
横滨市都筑区东山田 1-1-3
1-1-3, Higashiyamada, Tsuzuki-ku, Yokohama, Japan
TEL: +81-(0)45-593-7570 FAX: +81-(0)45-593-7571

●制造销售 Manufactured and Sold by

KIKUSUI SUZHOU

菊水电子（苏州）有限公司
KIKUSUI ELECTRONICS (SUZHOU) Co.,Ltd.

总部 / 工厂：苏州高新区滨河路 625 号 创业大厦 12-2-5F
TEL：0512-6808-0947 FAX：0512-6808-6852
电子邮件：info@kikusui.cn 主页：http://www.kikusui.cn/
广州办事处：广州市天河区体育东路 122 号 羊城国际商贸中心东塔 3210 室
TEL：020-2264-4908 FAX：020-3887-0152

Headquarters/plant: 12-2-5F Chuangye Bldg., No.625, Banghe Road, Gaoxin District, Suzhou City
TEL: 0512-6808-0947 **FAX:** 0512-6808-6852 **E-mail:** info@kikusui.cn **Homepage:** http://www.kikusui.cn/
Guangzhou Representative Office: 3210 East Tower Yangcheng International Commercial Center Ti Yu Dong Rd., Tianhe District, Guangzhou, China 510620
TEL: 020-2264-4908 **FAX:** 020-3887-0152

●销售代理店 Distributor

■因规格、式样等改进等理由，登载内容如有变更恕不另行通知。■由于各种原因可能会发生名称或价格的变更，以及中止生产的情况。■订货和签约时如有不明之处，请向销售代理店确认。另外，在没有确认的情况下，我公司概不负责。■本产品目录中所列产品，系在具有电气知识监督人员的监督之下使用为前提的业务用设备和装置，不是面向一般家庭和消费者而设计、制造的产品。■因印刷的原因，产品目录所列照片与实际产品的颜色和质感等在某些情况下会存在差异。

■ Specifications, designs, and other details are subject to change without notice for improvement and/or other reasons.
■ Product names and prices may be changed and production may be discontinued when necessary.
■ If you have any questions when placing an order or signing a purchase contract, please contact our distributor for clarification. We may not have any liability with respect to any loss or damage arising out of your failure to clarify such unconfirmed matters.
■ All the products mentioned in this catalog are business-use equipment and devices premised on use under the supervision of qualified personnel with a sufficient knowledge of electronics. These products are not designed or manufactured for home use by general consumers.
■ Due to the limited fidelity of printing, the actual products may differ in color, texture, and so forth from what they appear in the photos in this catalog.

●2005 年 4 月发行 Issued in April 2005